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A Tenneco Company

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March 19, 1991

Mr. Don Ostler, Director  
Utah Bureau of Water Pollution Control  
288 North 1460 West  
P.O. Box 16690  
Salt Lake City, Utah 84116-0690

RECEIVED

JUN 14 1991

DIVISION OF  
OIL GAS & MINING

Reference: Remedial Plan to Repair Process Ponds

Dear Mr. Ostler:

In response to your letter dated March 12, 1991, enclosed please find for your review our remedial plan to repair the process and barren ponds damaged as a result of the flyrock incident on March 6, 1991. The damage to the preg pond appears to have been corrected.

Please note that Tenneco Minerals has already made all accessible repairs to the FML of all three ponds. Our main focus is to remove water from the ponds through evaporation and saturation of the ore heaps so that the FML can be further evaluated and the necessary repairs made.

Based on a preliminary evaluation, it is our opinion that the barren solution pond appears to be reparable and we do not believe that this pond liner floated. At this point, we have successfully lowered the barren pond to an elevation of approximately 5 feet and repaired and vacuum tested all holes encountered. We plan to verify that the pond is not leaking by continuing to pump the leak detection sump. I anticipate we will need two weeks to verify the barren pond integrity.

Tenneco Minerals and its technical consultants continue to maintain that the 18-inches of  $2 \times 10^{-7}$  cm/sec low permeable clay will prevent any release of contaminants to the groundwater, but we also recognize it is imperative that the FML be re-established in the process water pond and be verified in the barren pond as soon as possible.



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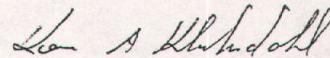
MR. DON OSTLER, DIRECTOR  
REMEDIAL PLAN TO REPAIR PROCESS PONDS

DATE: 03/19/91  
PAGE TWO

Please advise me of any concerns you may have.

Sincerely,

TENNECO MINERALS COMPANY



Ken A. Kluksdahl  
Mine Manager

KAK:bas

Enclosure:



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GOLDSTRIKE MINE

POND REMEDIAL PLAN

Background:

On March 5, 1991 a wedge crack was observed along the south portion of the Hamburg Peak highwall. This crack created a mining safety concern that the wedge of material (approximately 16,000 yd<sup>3</sup>) may fail and injure mine operators below. This same day a backhoe was maneuvered adjacent to the wedge and undercutting was initiated to promote sliding. This effort was unsuccessful and efforts were initiated to load explosives and discharge the wedge to induce a slide of the material. Excessive powder and initiation problems caused the wedge to shoot nearly horizontally in a path towards the mine office. Extraneous flyrock landed in the ponds and damaged the primary flexible membrane liner of both the barren and the process water ponds and caused some limited damage to the preg pond.

Utah Bureau of Water Pollution Control staff arrived on-site on March 7, 1991 and were immediately shown the pond damage. Tenneco Minerals immediately implemented the following items in an effort to assess the damage and remediate the situation.

1. The process water pond was repaired from the solution elevation line above the 400,000 gallon line. All repairs were vacuum tested. Solutions were noted in the leak detection sump. The leak detection sump is pumped on a continuous basis at a rate of approximately 20 gpm with solutions being returned to the process water pond. The continuous pumping appears to be effective in pulling the FML against the clay to minimize leakage through the FML. Based on visual observations of the markings on the process water pond, the pond level appears to be remaining stable. Please note, the process water pond contents are currently neutralized to less than 2 ppm free cyanide.

2. Barren solution was transferred to the process water pond lowering the elevation in the barren pond to the 400,000 gallon line. All repairs were made and vacuum tested. Solutions were noted in the leak detection sump. This sump is pumped on a daily basis.



3. Pregnant solution was transferred to the barren pond lowering the elevation in the pregnant pond to the 550,000 gallon line. All repairs were made and vacuum tested. All holes appeared to be at or on the pond margin. (No holes were noted at depth.) Solutions have not been detected in the leak detection sump to date.

4. Additional pumping of the barren pond contents to the process water pond lowered the pond level to the 300,000 gallon line. Four small holes were observed, repaired, and vacuum tested.

#### Proposed Remedial Plan:

Since excess water is in the system from the February 28-March 1, 1991 and the March 14-15, 1991 storm events, the primary objective is to reduce the inventory of water in the ponds. This will facilitate pond inspection, repair and/or FML replacement. Steps to allow this to occur are:

1. Rapidly place 100,000 tons of new ore on leach pad 2 and place under leach using existing solution (no cyanide or make-up water has been added to the barren pond since March 1, 1991). This will consume approximately 1,900,000 gallons of solutions to saturate (at 8% additional moisture required).

2. Pump existing solution to heap leach pad 1 to the extent that no underflow returns are received. Diversion berms and pumps are in-place to route the solutions to the preg solution line if these solutions appear.

Utilizing a combination of these practices and assuming no additional rainfall, it is conceivable that the process water pond would be evacuated in 3 to 4 weeks. At that time the FML will be re-established in the process water pond.

If it is determined that the barren pond is continuing to leak, solutions will be drawn down and pumped to the process water pond to determine if appropriate repairs can be made. If the damage is such that an effective repair cannot be made, the pond will be evacuated, cleaned, and re-lined. This will require additional draindown of the heaps and more ore to saturate this draindown (upwards of an additional 100,000 tons). This could require an additional months time.

The preg pond leak detection will be frequently monitored to determine if any additional action is necessary.



In any event NO make-up water or cyanide will be added to the system during this period. Rainfall events will be carefully documented to note water additions to the leaching and processing system. In addition, every attempt will be made to consume as much water as possible through evaporation and saturation of the ore heaps in as rapid a fashion as possible. This will expedite pond FML repairs.

When the timing to implement the repairs becomes more specific, a tentative implementation schedule will be submitted to your office.

After all necessary repairs are implemented, Tenneco Minerals will continue to monitor the pond leak detection sumps per the Bureau's requirements.